

What Is Claimed Is:

1. A polynucleotide comprising a nucleotide sequence encoding a polypeptide, wherein said polypeptide is identical to a reference polypeptide of SEQ ID NO:2 except for one or more mutations selected from the group consisting of: R68G, R68S, R68A, R78A, R80A, K81A, K87A, K91A, K136A, K137A, K139A, K144A, K148E, K149E, K151A, K153A, K155A, R174A, K183A, K183Q, K183E, R187A, R188A, R188E, K191E, the positively charged residues between and including R68 to K91 replaced with alanine, the positively charged residues between and including R68 to K91 replaced with neutral residues, and the positively charged residues between and including R68 to K91 replaced with negatively charged residues.

2. The polynucleotide of claim 1, wherein said reference polypeptide comprises amino acids 63 to 208, 69 to 208, 69 to 208, 77 to 208, 80 to 208 or 93 to 208 of SEQ ID NO:2.

3. A vector comprising the polynucleotide of claim 1.

4. A host cell comprising the polynucleotide of claim 1.

5. A method of producing a polypeptide, comprising culturing the host cell of claim 4 under conditions such that said polypeptide is expressed, and recovering said polypeptide.

6. A polypeptide encoded by the polynucleotide of claim 1.

7. A method for stimulating epithelial cell proliferation in a patient comprising administering to said patient the polypeptide of claim 6.

8. The method of claim 7, wherein said patient has a disorder selected from the group consisting of a wound, mucositis, an ulcer, inflammatory bowel disease, liver disorder, lung damage, diabetes, oral injury, gastrointestinal injury, gut toxicity, epidermolysis bullosa, skin graft, skin disorder, renal failure, brain injury, breast tissue injury, urothelial damage, female reproductive tract disorder, intestinal fibrosis, proctitis, pulmonary fibrosis, pneumonitis, pleural retraction, hemopoietic syndrome, and myelotoxicity.

9. A method for treating or preventing ovary injury, infertility, or fibrosis of the liver in a patient, comprising administering an effective amount of a polypeptide of SEQ ID NO:2 or an active fragment or variant thereof to said patient.

10. A method for promoting internal healing, donor site healing, internal surgical wound healing, or healing of incisional wounds made during cosmetic surgery in a patient comprising administering an effective amount of a polypeptide of SEQ ID NO:2 or an active fragment or variant thereof to said patient.

11. A method for producing a polypeptide comprising:
(a) inserting a polynucleotide encoding amino acids 63 to 208 in a vector;
(b) transfecting said vector into a host cell;
(c) culturing said host cell under conditions such that said polypeptide is expressed;
(d) lysing said cells in the presence of Guanidine Hydrochloride; and
(e) recovering said polypeptide.

12. A polynucleotide comprising nucleotides 4 to 444 of SEQ ID NO:173 or 1 to 441 of SEQ ID NO:176.